Space Weather Forecast

Issued on Friday, 27 January 2023 at 01:13 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Decreasing chance of R1/R2 Radio Blackouts.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Moderate over the past 24 hours with a Moderate class flare observed at 26/1306 UTC from a region which has now rotated behind the west limb. This leaves seven numbered sunspot regions on the visible disc. However, all regions are small, weak and magnetically simple, and either stable or showing slight decay. No Earth-directed CMEs were detected in available imagery.

Solar Wind / Geomagnetic Activity: The solar wind gradually increased from initial slightly elevated levels around 450 km/s, to end the period at elevated levels near 550 km/s, with a peak of 568 km/s at 26/1850 UTC. The north-south component was weak, fluctuating between southward and northward directions. The resultant geomagnetic activity was Quiet to Unsettled.
Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) persisted at background with no solar radiation storms occurring.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be predominantly Low as previous large and active regions have now rotated onto the far side. These regions will continue to give a residual risk of Moderate class flares through today, but thereafter the chance of Moderate flares rapidly decreases as the current remaining seven regions on the visible disc are all small, weak and magnetically simple. However, there is a chance that new regions will rotate onto the visible disc within the next few days, potentially increasing he chance of significant flares.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs in this forecast. Solar winds are currently elevated due to the arrival of enhanced winds from a coronal hole feature. Little change is expected today and much of tomorrow, as tomorrow there is a chance of a further slight enhancement in the solar wind from a weak coronal hole feature. Then from day 3 (29th) the solar wind is expected to decline to slightly elevated levels. Geomagnetic activity is expected to be Quiet with Unsettled for much of the period, but with a chance of isolated Active intervals and a slight chance of G1/Minor Storms today and tomorrow.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is currently expected to remain at background with no solar radiation storms occurring. However, there is a slight chance of reaching the S1 Solar Radiation Storm level through today, due to the residual risk from the large regions that have now rotated onto the far side.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2023. All Rights Reserved.

Met Office

Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	20	10	20	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	Yes	30	10	1	1
Very Active	R3 to R5 X	No	5	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2023. All Rights Reserved.